



The Trusted Integrator for Sustainable Solutions

205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: SE_Leg-PA-01

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE_Leg-PA-01

Date Completed: 3/19/2004

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
		Interval 1 Brown SILT and ORGANICS				
1		Interval 2 Brown SILT and f-SAND. Dense. (Moist).				
2		Interval 3 Grey m-c SAND. Dense. Staining. Wet @ 3.5 feet bgs.	4/4	0.0		
3						PID malfunctioning
4		Interval 4 Grey m-c SAND. Loose. Staining and strong odors. Dark bands of staining and product observed @ 6.5 feet bgs. (Wet).				Jar test = sheen
5						Dye test = positive
6			4/4			
7		Interval 5 Grey c-SAND. Dense. Lightly staining and odors. No product observed. (Wet).				Dye test = positive
8		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Gore

Northing (NAD 83): -99999999

Easting (NAD 83): -99999999

Depth to Watertable (ft bgs):



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Phone: (732) 417-5800
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Log of Borehole: SE-Leg-03_B

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg-03_B

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
		Interval 1 Brown SILT and ORGANICS and f-SAND. No odors. No Staining. (Wet)		0.0		
1		Interval 2 Brown SILT and GRAVEL, little tan f-sand. Dense. No odors, no staining. (Moist)				
2			4/4			
3				0.0		
4		Interval 3 Red brown SILT and GRAVEL, trace clay and yellow f-sand. Dense. No staining, no odors. Saturated.				
5				0.0		
6		Interval 4 Dark grey f-SAND. Dense. Heavy staining, strong odors. (Wet)	4/4			
7				0.0		
8		Interval 6 Grey f-m SAND. Medium dense. Light staining and odors. No product. (Wet)		0.0		
		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -99999999

Easting (NAD 83): -99999999

Depth to Watertable (ft bgs):



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Phone: (732) 417-5800
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Log of Borehole: SE-Leg-03

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg-03

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
		Interval 1 Brown SILT and ORGANICS. Soft. No staining, no odors. (Wet)		0.0		
1		Interval 2 Red brown SILT, little clay, trace brown-yellow f-sand. Dense.				
2			4/4			
		Interval 3 Brown and grey SILT and CLAY, little yellow sand. Soft. Staining and slight odors. (Moist)		0.0		
3				1.4		
4		Interval 4 Brown SILT and f-m SAND, trace gravel. Dense. Light staining and strong odors. (Saturated)				
5		Interval 5 Black and grey SILT and f-SAND, little gravel. Slight odors, no product observed. (Moist)		14		
6			4/4			
7				7.4		
		Interval 6 Light grey f-SAND. Loose. Slight staining and odors. No product. (Wet)		0.0		
8		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Gore

Northing (NAD 83): -99999999

Easting (NAD 83): -99999999

Depth to Watertable (ft bgs):



205 Campus Drive
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Phone: (732) 417-5800
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Log of Borehole: BLN_B-6

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 16

Borehole Completed As: BLN_B-6

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments			
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample				
0		Ground Surface	4/4		0 - 0.5	Top of LNAPL			
1		Interval 1 Gray SILT and CLAY, some Gravel (Dry)			0.5 - 1				
2					1 - 1.5				
3					1.5 - 2				
4					2 - 2.5				
5		Interval 2 Fill: Soil (Moist)	2.5 - 3						
6			3 - 3.5						
7			3.5 - 4						
8									
9		Interval 3 Pale Gray fine SAND, trace Silt and Clay (Saturated)	4/4				9 - 9.5	Bottom of LNAPL	
10									Interval 4 Light Gray medium to fine SAND, trace Silt (Saturated)
11									
12									
13		Interval 5 Light Gray medium to fine SAND, trace Silt (Saturated)	4/4	12.5 - 13 13 - 13.5					
14									
15									
16		Interval 6 Gray CLAY and SILT (Moist)	4/4						
17									
18									
19	End of Borehole								

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614530.543

Easting (NAD 83): 542680.154

Depth to Watertable (ft bgs): 5.2



205 Campus Drive
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Phone: (732) 417-5800
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Log of Borehole: BLN_B-7

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: BLN_B-7

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Dark Gray SILT and CLAY, some fine Sand, some Gravel (Moist)				
1						
2			3/4			
3						Top of LNAPL
4						
5						
6		Interval 2 Gray CLAY and SILT, and fine Sand (Saturated)	3/4			
7					7 - 7.5	
8		Interval 3 Light Yellowish Brown Silty CLAY (Moist)			7.5 - 8	Bottom of LNAPL
9		Interval 4 Light Gray fine SAND, little Silt (Saturated)			8 - 8.5	
10		Interval 5 Light Gray fine SAND, little Silt (Saturated)	4/4			
11						
12		End of Borehole				
13						
14						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614528.634

Easting (NAD 83): 542600.222

Depth to Watertable (ft bgs): 5.4



205 Campus Drive
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Phone: (732) 417-5800
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Log of Borehole: BLN_B-10

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 14

Borehole Completed As: BLN_B-10

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil				
1						
2			3.5/4			
3						
4		Interval 2 Light Gray CLAY and SILT, little fine Sand (Saturated)				Top of LNAPL
5						
6			4/4			
7						
8		Interval 3 Light Gray coarse to medium SAND, trace Silt (Saturated)				
9						
10		Interval 4 Dark Brown CLAY and SILT (Moist)	4/4			
11						
12		Interval 5 Light Gray CLAY and SILT, little fine Sand (Saturated)				
13		Interval 6 Pale Gray medium to fine SAND, little Silt, little Gravel (Saturated)			12 - 12.5 12.5 - 13	Bottom of LNAPL
14			2/2			
15		End of Borehole				

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614453.627

Easting (NAD 83): 542619.637

Depth to Watertable (ft bgs): 4.6



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Phone: (732) 417-5800
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Log of Borehole: BLN_B-13

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: BLN_B-13

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil				
1		Interval 2 Light Greyish Brown fine SAND, trace Silt (Moist) SOME STAINING, SILT LENSE, AND BEDDING.				
2			3.5/4			
3						
4						Top of LNAPL
5					5 - 5.5	Bottom of LNAPL
6			4/4		5.5 - 6	
7						
8		End of Borehole				
9						
10						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614349.044

Easting (NAD 83): 542599.552

Depth to Watertable (ft bgs): 5.1



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Log of Borehole: BLN_B-18

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 16

Borehole Completed As: BLN_B-18

Date Completed: 5/14/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0.5		Interval 1 Dark Gray coarse to fine SAND Asphalt.				
1						
2		Interval 2 Fill: Soil-Rubble	4/4			
3						
4						
5						
6			4/4			Top of LNAPL
7		Interval 3 Light Gray fine SAND, trace Silt (Saturated)		140 ppm		
8				100 ppm		
9						
10			4/4			
11						
12						
13		Interval 4 Light Gray coarse to fine SAND (Saturated)				
14			3/4		13.5 - 14 14 - 14.5	Bottom of LNAPL
15						
16		End of Borehole				
17						
18						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614294.902

Easting (NAD 83): 542577.493

Depth to Watertable (ft bgs): 6.5



205 Campus Drive
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Log of Borehole: BLN_B-22

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: BLN_B-22

Date Completed: 5/16/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface			0 - 0.5	Top of LNAPL
0.5		Interval 1 Fill: Soil-Rubble Mixed fill.	4/4		0.5 - 1	
1					1 - 1.5	
1.5					1.5 - 2	
2					2 - 2.5	
3		Interval 2 Light Gray fine SAND, little Silt (Saturated)	4/4			Bottom of LNAPL
4						
5						
6						
7						
8		Interval 3 Light Pale Gray CLAY and SILT, trace medium Sand (Moist)	2/4		7.5 - 8	
8.5		Interval 4 Light Yellowish Brown fine SAND, some Silt and Clay (Moist)			8 - 8.5	
9		Interval 5 Light Gray coarse to fine SAND (Moist)				
10						
11						
12		End of Borehole				
13						
14						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614549.767

Easting (NAD 83): 542547.365

Depth to Watertable (ft bgs): 4.6



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Log of Borehole: BLN_B-2

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 16

Borehole Completed As: BLN_B-2

Date Completed: 5/8/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
1		Interval 1 Gray CLAY and SILT, little Gravel (Moist)				
2			3/4			
3						
4						
5						
6			4/4			
7						
8						
9						
10			4/4			
11		Interval 2 Dark Gray fine SAND, trace Silt and Clay (Moist)				Top of LNAPL
12						
13		Interval 3 Gray coarse to medium SAND, trace Silt (Saturated)				
14			3/4			
15						
16						Bottom of LNAPL
17		End of Borehole				
18						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614641.219

Easting (NAD 83): 542634.991

Depth to Watertable (ft bgs): 6.1



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Log of Borehole: SE-Leg-01_B

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg-01_B

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Brown SILT and ORGANICS (fibrous root). Dense. (Moist)				
1		Interval 2 Grey and brown SILT, some f-sand, little cobble, trace organics. Dark black staining @ 2.5 feet bgs. Odors present. No product observed. Wet @ 3.5 feet bgs.	4/4	18.2		
2						
3						
4		Interval 3 Grey and black SILT and f-SAND, soft, little clay, trace organics. Staining and strong odors. (Wet)				
5						
6			4/4			
7		Interval 4 Grey c-SAND. Loose. Staining and product present in pore space. (Saturated)		78.1		Jar test = product
7		Interval 5 Grey CLAY, dense. No odors, no staining. (Moist)		0.0		
8		Interval 6 Grey CLAY, some silt, dense. No odors, no staining. (Moist)		0.0		
8		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -99999999

Easting (NAD 83): -99999999

Depth to Watertable (ft bgs):

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Phone: (732) 417-5800
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Log of Borehole: SE-Leg_01_C

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg_01_C

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Brown SILT and ORGANICS (phrag root). No odors. (Moist)		0.0		
1		Interval 2 Red brown SILT, some brown clay, little gravel, trace f-sand. No odors.	4/4			
2						
3						
4		Interval 3 Red brown SILT, some brown clay, little f- sand, trace gravel. Soft. Wet @ 4 feet bgs. No odors, no staining.		0.0		
5						
6			4/4			
7		Interval 4 Red brown CLAY and brown SILT. Dense. Slight odor, no staining. (moist)		0.0		
7		Interval 5 Grey f-m SAND. Loose. Staining and strong odors. (Wet).		0.0		
8		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -999999999

Easting (NAD 83): -999999999

Depth to Watertable (ft bgs):

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Phone: (732) 417-5800
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Log of Borehole: SE-Leg_01_D

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg_01_D

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Brown SILT and ORGANICS (phrag root). No odors. (Moist)		0.0		
1		Interval 2 Red brown SILT, some red brown clay, trace tan f-sand. Wet @ 4 feet bgs. No odors.				
2			4/4			
3				0.0		
4		Interval 3 Brown SILT, little f-m sand and gravel, trace red brown clay. Soft. No odors. (Saturated)				
5				0.0		
6			4/4			
7		Interval 4 Red brown SILT and tan f-SAND, trace red brown clay. Dense. No odors. (Moist).		0.0		
8		Interval 5 Grey m-f SAND. Medium dense. Staining and strong odors. Residual product observed. (Wet)		2.5		
8		Interval 6 Light grey m-SAND. Loose. Slight staining, no product. (Wet)		0.0		
9		End of Borehole				
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -999999999

Easting (NAD 83): -999999999

Depth to Watertable (ft bgs):



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Phone: (732) 417-5800
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Log of Borehole: SE-Leg-02

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg-02

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burnlister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
		Interval 1 Brown SILT and ORGANICS (phrag roots), little tan f-sand. Dense. No odors. (Wet)		0.0		
1		Interval 2 Dark grey SILT and f-m SAND, little brick, trace gravel. Loose. Heavy staining and strong odors. (Moist)		268		
2		Interval 3 Tan f-m SAND. Loose. No staining, strong odors. (Moist)	4/4			
3				131		
4		Interval 4 Light grey f-m SAND. Loose. Strong odors. Wet @ 4 feet bgs.		184		
		Interval 5 Grey c-SAND and CLAY. Medium dense. Slight staining and strong odors. (wet)		14.0		
5		Interval 6 Dark grey and black c-SAND. Loose. Heavy staining and strong odors. (Moist)				
6		Interval 7 Grey m-c SAND. Loose. Product observed in pore space. Strong odors. (Wet)	4/4	0.0		
		Interval 8 Grey m-SAND. Loose. Light staining, strong odors. (Wet)		6.8		Jar test = floating product
7				0.8		
8		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -99999999

Easting (NAD 83): -99999999

Depth to Watertable (ft bgs):

Log of Borehole: SE-Leg-02_B

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg-02_B

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

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SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Brown SILT and ORGANICS. Dense. No odors. (Moist)		0.0		
1		Interval 2 Light brown SILT and f-SAND. Dense. Light staining and slight odors. (Moist)				
2			4/4	0.0		
3		Interval 3 Dark grey and black SILT and f-m SAND. Loose. Heavy staining and strong odors. (Moist)		86.4		
4		Interval 4 Grey SILT and f-SAND. Loose. Mobile product observed with strong odors. Wet @ 4 feet bgs.		34.0		
5		Interval 5 Dark grey SILT and SAND, some gravel. Loose. Staining and strong odors. (Wet)				
6			4/4	17.1	6.5-7	
7						
8		End of Borehole				
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -999999999

Easting (NAD 83): -999999999

Depth to Watertable (ft bgs):



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Log of Borehole: SE-Leg-02_C

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: SE-Leg-02_C

Date Completed: 3/20/2014

Geologist/Logger: Leeron Tagger

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Brown SILT and ORGANICS. Dense. No odors. (Moist)		0.0		
1		Interval 2 Brown SILT and f-SAND, some gravel. No staining, no odors. (Moist)				
2			4/4	0.0		
3		Interval 3 Dark grey and black SILT, some f-sand. Loose. Mobile product observed, strong odors. Wet @ 3 feet bgs.		30.2		
4		Interval 4 Grey f-m SAND, little gravel, trace wood debris @ 8 feet bgs. Loose. Staining and strong odors. (Wet)				
5						
6			4/4			
7						
8		End of Borehole		11.0		
9						
10						

Drilling Subcontractor: AWT

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): -99999999

Easting (NAD 83): -99999999

Depth to Watertable (ft bgs):



205 Campus Drive
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Phone: (732) 417-5800
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Log of Borehole: LN_B-5

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: LN_B-5

Date Completed: 4/25/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				Top of LNAPL
Interval 1		Greyish Brown SILT, NA fine Sand (Moist) (Loose)	3.5/4			
Interval 2		Brownish Gray CLAY and SILT, little fine Sand (Moist) (Stiff)				
Interval 3		Light Gray CLAY and SILT, trace medium Sand (Moist) (Stiff)				
Interval 4		Light Greyish Black SILT and CLAY, little medium Sand (Saturated) (Soft)	4/4	147 ppm	9.5 - 10	
Interval 5						
Interval 6						
Interval 7						
Interval 8						
Interval 9						
Interval 10						
Interval 11						
Interval 12						
Interval 13						
Interval 14						
Interval 15						
Interval 16						
Interval 17						
Interval 18						
Interval 19						
Interval 20						
Interval 21						
Interval 22						
Interval 23						
Interval 24						
Interval 25						
Interval 26						
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Log of Borehole: LN_B-7

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 16

Borehole Completed As: LN_B-7

Date Completed: 4/26/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1				
1		crushed stone gravel				
2		Interval 2	4/4			
3		Brownish Yellow coarse to fine SAND (Dry)				
4		Interval 3				
5		Gray medium to fine SAND, some Silt and Clay (Moist)				
6		Interval 4	3/4	97 ppm	5.5 - 6	Top of LNAPL Bottom of LNAPL
7		Dark Gray medium to fine SAND (Wet) brown product				
8		Interval 5				
9		Moderate Gray medium to fine SAND (Wet)				
10		Interval 6	4/4	79 ppm	10 - 10.5	
11		Moderate Gray medium to fine SAND (Saturated) odor				
12		Interval 7				
13		Gray Silty CLAY (Saturated)				
14			4/4			
15						
16		End of Borehole				
17						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614583.388

Easting (NAD 83): 542706.93

Depth to Watertable (ft bgs): 5.6



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Log of Borehole: LN_B-7_5E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: LN_B-7_5E

Date Completed: 4/26/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1				
1		crushed stone gravel fill				
2		Interval 2				
3		Yellowish Brown coarse to fine SAND (Moist)				
4						
5		Interval 3				
6		Light Gray medium to fine SAND, little Silt (Wet)				Top of LNAPL
7		Interval 4				
8		Gray medium to fine SAND (Wet)				Bottom of LNAPL
9						
10		Interval 5				
11		Gray medium to fine SAND (Wet)				
12		Interval 6				
13		Light Gray medium to fine SAND (Wet)				
12		End of Borehole				

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614583.388

Easting (NAD 83): 542711.93

Depth to Watertable (ft bgs): 5.7



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Log of Borehole: LN_B-7_10E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: LN_B-7_10E

Date Completed: 4/26/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
1		Interval 1 Light Gray medium to fine SAND crushed gravel stone and fill				
2		Interval 2 Yellow medium to fine SAND (Moist)				
3						
4						
5		Interval 3 Light Gray medium to fine SAND (Wet) odor				
6						
7						Top of LNAPL
8		Interval 4 Dark Greyish Black medium to fine SAND (Wet)				Bottom of LNAPL
9						
10		Interval 5 Light Gray medium to fine SAND (Wet)				
11						
12		End of Borehole				
13						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614583.388

Easting (NAD 83): 542716.93

Depth to Water Table (ft bgs): 5.7



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Log of Borehole: LN_B-7_15E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-7_15E

Date Completed: 4/26/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Light Gray medium to fine SAND crushed stone, brick fragments, gravel				
Interval 2		Yellow medium to fine SAND (Moist) odor				
Interval 3		Light Yellow medium to fine SAND (Wet) odor				Top of LNAPL
Interval 4		Black medium to fine SAND (Wet) staining				Bottom of LNAPL
Interval 5		Light Gray medium to fine SAND (Saturated)				
End of Borehole						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614583.388

Easting (NAD 83): 542721.93

Depth to Watertable (ft bgs): 5.7



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Log of Borehole: LN_B-7_20E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-7_20E

Date Completed: 4/26/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Light Brown medium to fine SAND, trace Silt CRUSHEDSTONE GRAVEL				
1						
2		Interval 2 Brownish Yellow medium to fine SAND (Moist)				
3						
4		Interval 3 Dusky Brown medium to fine SAND (Wet)				
5						
6		Interval 4 Dusky Brown medium to fine SAND (Wet) PRODUCT				Top of LNAPL
7						
8		Interval 5 Light Gray medium to fine SAND (Saturated)				Bottom of LNAPL
9						
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614583.388

Easting (NAD 83): 542726.93

Depth to Watertable (ft bgs): 5.8



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Log of Borehole: LN_B-7_25E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-7_25E

Date Completed: 4/26/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Light Gray medium to fine SAND CRUSHED STONE GRAVEL				
Interval 2		Dark Brown medium to fine SAND (Moist)				
Interval 3		Gray medium to fine SAND (Wet)				
5.5 - 6				115 ppm	5.5 - 6	
End of Borehole						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614583.956

Easting (NAD 83): 542738.306

Depth to Watertable (ft bgs): 4



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Log of Borehole: LN_B-8_10W

Project: Hatco

Client: Hatco Corporation


Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-8_10W

Date Completed: 4/30/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface	5/5			No LNAPL
Interval 1						
Light Greyish Brown coarse to fine SAND, some Silt and Clay, little Gravel (Dry)						
1						
2						
3						
4						
Interval 2						
Light Reddish Gray CLAY and SILT, some fine Sand (Moist) (Stiff)						
5						
Interval 3						
Light Gray medium to fine SAND, little Silt (Saturated)	5/5					
6						
7						
8						
9						
10						
11						
End of Borehole						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614487.006

Easting (NAD 83): 542708.142

Depth to Watertable (ft bgs): 5



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Log of Borehole: LN_B-8_15W

Project: Hatco

Client: Hatco Corporation



Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-8_15W

Date Completed: 4/30/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface	4/5			No LNAPL
Interval 1		Light Greyish Brown coarse to fine SAND, and Silt, little Gravel (Dry)				
1						
2						
3						
Interval 2	Pale Brown fine SAND, some Silt (Moist)	4.5/5				
4						
Interval 3	Pale Gray CLAY and SILT, some fine Sand (Moist)					
5		Interval 4	Light Brownish Gray medium to fine SAND, and Silt and Clay (Saturated)			
6						
7						
Interval 5	Gray coarse to medium SAND (Saturated)	4.5/5				
8						
9						
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614487.006

Easting (NAD 83): 542703.142

Depth to Watertable (ft bgs): 5



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Log of Borehole: LN_B-9_5W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-9_5W

Date Completed: 4/30/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Dusky Brown medium to fine SAND, little Gravel (Moist)				
1		Interval 2 Black SILT and CLAY, and coarse to fine Sand, trace Gravel (Moist)				
2		Interval 3 Greyish Brown medium to fine SAND, little Silt and Clay (Moist)				
3		Interval 4 Light Brown medium to fine SAND, and Silt and Clay, some Gravel (Moist)				
4		Interval 5 Pale Gray Silty CLAY (Moist) (FirmFirm)				
5		Interval 6 Light Brownish Gray medium to fine SAND (Saturated)				
6						
7						
8		Interval 7 Dark Gray coarse to fine SAND (Saturated)				
9						
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 0

Easting (NAD 83): 0

Depth to Watertable (ft bgs): 5



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Log of Borehole: LN_B-9_10W

Project: Hatco

Client: Hatco Corporation


Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-9_10W

Date Completed: 4/30/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface	4.5/5			
		Interval 1 Dusky Brown CLAY and SILT, some fine Sand, little Gravel (Dry)				
1						
2		Interval 2 Dark Gray fine SAND, some Silt and Clay (Moist)				
3						
4	Interval 3 Pale Gray Silty CLAY, little fine Sand (Moist) (Stiff)	5/5				
5	Interval 4 Light Gray medium to fine SAND (Saturated)					
6						
7	Interval 5 Pale Gray coarse to fine SAND (Saturated)					
8						
9						
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614382.471

Easting (NAD 83): 542680.94

Depth to Watertable (ft bgs): 4



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Log of Borehole: LN_B-10_5W

Project: Hatco

Client: Hatco Corporation



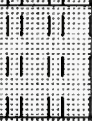
Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-10_5W

Date Completed: 5/1/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface	5/5			No LNAPL
		Interval 1 Brownish Gray fine SAND, and Silt and Clay (Dry)				
1						
2						
3						
4		Interval 2 Dark Gray fine SAND, and Silt and Clay (Moist)				
5		Interval 3 Light Gray fine SAND, some Silt (Saturated)	5/5			
	Interval 4 Moderate Gray medium to fine SAND, trace Silt (Saturated)					

Subcontractor: ECDI

Method: Geoprobe

Method: Macro-core

Northing (NAD 83): 614300.247

Easting (NAD 83): 542644.415

Depth to Watertable (ft bgs): 5



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Log of Borehole: LN_B-10_10W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-10_10W

Date Completed: 5/1/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Brownish Gray fine SAND, some Silt and Clay, trace Gravel (Dry)	4.5/5			
1						
2						
3						
Interval 2		Dark Gray SILT and CLAY, and fine Sand (Moist)	2.5/5			
4						
5						
Interval 3		Light Gray medium to fine SAND, trace Silt (Saturated)				
6					6 - 6.5	LNAPL Present, Color: Black,
7						
8						
9						
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614300.47

Easting (NAD 83): 542638.161

Depth to Watertable (ft bgs): 5



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Log of Borehole: LN_B-11

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-11

Date Completed: 4/30/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
1		Interval 1 Fill: Soil-Rubble (Dry) (Loose)				
2		Interval 2 Yellowish Brown medium to fine SAND (Moist)	2.5/5			
3						
4		Interval 3 Brownish Red Silty CLAY, little medium Sand (Moist) (Stiff)				
5		Interval 4 Brown medium to fine SAND, little Silt (Saturated) (Loose)			5.5 - 6	
6		Interval 5 Dark Gray coarse to fine SAND, and Clay and Silt (Saturated) (Soft)				
7		Interval 6 Dark Gray Silty CLAY, little fine Sand (Stiff)	5/5			Top of LNAPL
8		Interval 7 Dark Brown coarse to fine SAND (Moist) (Loose)				LNAPL Stain Present
9		Interval 8 Light SILT and CLAY, NA fine Sand (Moist) (Loose)				
10		End of Borehole				Bottom of LNAPL
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614228.625

Easting (NAD 83): 542583.67

Depth to Watertable (ft bgs): 5.2



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Log of Borehole: LN_B-11_15N

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: LN_B-11_15N

Date Completed: 5/7/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil				
1						
2			3.5/4	10 ppm		
3						
4						
4		Interval 2 Dark Gray SILT and CLAY, and fine Sand (Moist)				
5						
6			4/4			
7						
8						Top of LNAPL
8		Interval 3 Gray fine SAND, little Silt, trace Gravel (Saturated)				
9						
10			4/4			
11						Bottom of LNAPL
12					11.5 - 12	
12		Interval 4 Gray CLAY and SILT, some fine Sand (Saturated)				
13		End of Borehole				

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614248.852

Easting (NAD 83): 542583.254

Depth to Watertable (ft bgs): 5.3



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Log of Borehole: LN_B-13

Project: Hatco

Client: Hatco Corporation


Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-13

Date Completed: 5/1/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface	5/5	0 ppm	5.5 - 6	NONE
Interval 1 Brown medium to fine SAND, and Silt and Clay (Moist)						
1						
2						
Interval 2 Brownish Black fine SAND, and Silt and Clay (Moist)						
3						
4						
Interval 3 Greyish Black medium to fine SAND, some Silt (Wet)						
5						
Interval 4 Gray medium to fine SAND, some Silt (Wet)						
6						
7						
Interval 5 Black coarse to fine SAND (Wet)						
8						
Interval 6 Gray coarse to fine SAND, little Silt and Clay (Saturated)						
9						
10						
End of Borehole						
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614345.896

Easting (NAD 83): 542598.993

Depth to Watertable (ft bgs): 5.5

Page 1 of 1



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Log of Borehole: LN_B-13_5E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-13_5E

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil ASH MATERIAL TOWARDS BOTTOM OF SLEEVE.				
1						
2			3/4			
3						
4		Interval 2 Dark Gray fine SAND, and Silt (Saturated)				
5					5.5 - 6	
6			3.5/4			
7						
8		End of Borehole				
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614345.391

Easting (NAD 83): 542603.716

Depth to Watertable (ft bgs): 4



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-13_10E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 4

Borehole Completed As: LN_B-13_10E

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil				
1						
2			3.5/4			
3		Interval 2 Dark Brown SILT and CLAY, some fine Sand (Moist)				
4						
5						Top of LNAPL
6						
7		End of Borehole				Bottom of LNAPL
8						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614344.355

Easting (NAD 83): 542610.177

Depth to Watertable (ft bgs): 5.1



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-16

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-16

Date Completed: 4/25/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Greyish Brown GRAVEL, NA coarse to fine Sand (Dry) (Loose)				
1		Interval 2 Dark Brown medium to fine SAND, and Silt (Moist) (Loose)				
2		Interval 3 Light Brown medium to fine SAND, some Silt, some Gravel (Moist) (FirmFirm)	3.5/4			
3		Interval 4 Dark Greyish Brown medium to fine SAND, and Silt (Moist) (FirmFirm)				
4		Interval 5 Light Gray coarse to fine SAND (Saturated) (Loose)				
5						
6		Interval 6 Dark Gray coarse to fine SAND (Saturated) (Loose)	3/4		6 - 6.5	
7					7.5 - 8	
8		End of Borehole				
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614574.293

Easting (NAD 83): 542572.984

Depth to Watertable (ft bgs): 4



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-15_35E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-15_35E

Date Completed: 5/1/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Greyish Brown coarse to fine SAND, little Silt, some Gravel (Dry)	4/5			
1						
2						
3						
4		Interval 2 Dark Gray medium to fine SAND, little Silt (Wet)	5/5			
5						LNAPL Present, Color: Black
6						
7		Interval 3 Pale Gray Silty CLAY (Saturated) (Firm)				Bottom of LNAPL
8		Interval 4 Light Greyish Brown CLAY and SILT, some fine Sand (Saturated) (Hard)				
9						
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614492.396

Easting (NAD 83): 542593.701

Depth to Watertable (ft bgs): 4.9



205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-15_25E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-15_25E

Date Completed: 5/1/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Brownish Gray coarse to fine SAND, little Silt, some Gravel (Dry)	4/5			
1						
2						
3						
4		Interval 2 Gray fine SAND, little Silt (Wet)	5/5			
5						
6						
7		Interval 3 Gray medium to fine SAND (Saturated)				
8						
9		Interval 4 Light Gray CLAY and SILT,NA fine Sand (Saturated)				
10		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614478.696

Easting (NAD 83): 542582.686

Depth to Watertable (ft bgs): 3.5



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-21

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-21

Date Completed: 5/2/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Brown medium to fine SAND, little Silt (Moist)	5/5			
Interval 2		Yellowish Brown medium to fine SAND, some Silt and Clay (Moist)				
Interval 3		Greyish Brown CLAY and SILT, and medium to fine Sand (Wet) (Stiff)				
Interval 4		Brownish Gray coarse to fine SAND (Saturated)	5/5	0 ppm	8.5 - 9	LNAPL Present, mod weathered highly emulsified nonviscous
Interval 5		Greyish Brown coarse to fine SAND, little Silt and Clay (Saturated)				Bottom of LNAPL
End of Borehole						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614408.086

Easting (NAD 83): 542659.829

Depth to Watertable (ft bgs): 4.7



205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-21_10W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-21_10W

Date Completed: 5/2/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Dark Brown fine SAND, some Silt (Moist)	5/5			
1						
2						
Interval 2		Yellowish Orange Brown coarse to fine SAND, trace Silt, little Gravel (Moist)	5/5			
3						
4						
Interval 3		Pinkish White CLAY and SILT, some fine Sand (Moist) (Stiff)	5/5			
5						
6						
Interval 4		Gray coarse to fine SAND (Wet)	5/5			
7						
8						
Interval 5		Greyish Black coarse to fine SAND (Wet)	5/5			
9						
10						
Interval 6		Greyish White CLAY and SILT, little fine Sand (Saturated) (Stiff)				
11		End of Borehole				

LNAPL Present, mod weathered some emulsify viscous

Bottom of LNAPL

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614405.338

Easting (NAD 83): 542656.249

Depth to Watertable (ft bgs): 4.6



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-21_30W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 10

Borehole Completed As: LN_B-21_30W

Date Completed: 5/2/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Brown medium to fine SAND, some Silt (Moist)				
1						
2		Interval 2				
		Greyish Brown fine SAND, some Silt and Clay (Wet)	5/5			
3						
4						
5						
6						
7		Interval 3				
		Dark Black coarse to fine SAND (Saturated)	4/5			LNAPL Present, mod weathered some emulsify viscous
8						
9						
10		Interval 4		0 ppm	9.5 - 10	Bottom of LNAPL
		Brown SILT and CLAY, little fine Sand (Saturated) (Soft)				
		End of Borehole				
11						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614386.727

Easting (NAD 83): 542639.641

Depth to Watertable (ft bgs): 4.1



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-26

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: LN_B-26

Date Completed: 5/7/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil-Rubble				
1						
2			3.5/4			
3						
4						
5						
6			4/4			Top of LNAPL
7		Interval 2 Dark Gray CLAY and SILT (Moist) Lenses				
8						
9		Interval 3 Light Gray medium to fine SAND, little Silt (Saturated) Clay lenses.				Bottom of LNAPL
10			3.5/4			
11						
12		End of Borehole				
13						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614242.481

Easting (NAD 83): 542593.293

Depth to Watertable (ft bgs): 5.2



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-26_10E

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-26_10E

Date Completed: 5/7/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil-Rubble				
1						
2			3.5/4			
3						
4						
5						
6			4/4		6 - 6.5	
7						
8		Interval 2 Gray fine SAND, little Silt (Saturated)				
9						
10						
11						
12		End of Borehole				
13						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614242.294

Easting (NAD 83): 542607.791

Depth to Watertable (ft bgs): 6



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-27

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: LN_B-27

Date Completed: 5/7/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
1		Interval 1 Fill: Silt-Rubble Brick, ash.				
2			3/4			
3						
4						
5						
6			3/4			
7						
8						
9		Interval 2 Light Gray fine SAND, some Silt (Saturated)			9.5 - 10	
10			3.5/4			
11						
12						
13		End of Borehole				

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614241.279

Easting (NAD 83): 542563.019

Depth to Watertable (ft bgs): 9



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28

Date Completed: 5/7/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
Interval 1		Fill: Soil-Rubble Bricks, concrete, ash.				
1						
2			3/4			
3						
4						
5						
6			3.5/4			Top of LNAPL
7						
Interval 2		Light Gray fine SAND, little Silt (Saturated)				
8						Bottom of LNAPL
End of Borehole						
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614279.035

Easting (NAD 83): 542606.164

Depth to Watertable (ft bgs): 5.3



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28_10W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28_10W

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil ASH MATERIAL AT 3.0FT.				
1						
2			3.5/4			
3						
4		Interval 2 Dark Gray SILT and CLAY, little fine Sand (Saturated) POSSIBLE LAGOON SEDIMENTS.				
5						
6			4/4			
7		Interval 3 Light Gray fine SAND, trace Silt (Saturated)				
8		End of Borehole				
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 0

Easting (NAD 83): 0

Depth to Watertable (ft bgs): 4



205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28_20W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28_20W

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil MIX FILL WITH STAINING.				
1						
2			3/4			
3		Interval 2 Dark Gray SILT and CLAY, trace medium Sand, little Gravel (Moist) POSSIBLE LAGOON SEDIMENT.				
4						
5						
6			4/4			
7		Interval 3 Light Gray Silty CLAY (Saturated)				
8		End of Borehole				
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614283.92

Easting (NAD 83): 542588.733

Depth to Watertable (ft bgs): 6



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28_30W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28_30W

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil-Rubble				
1						
2			2.5/4			
3		Interval 2 Dark Gray SILT and CLAY, trace medium Sand, trace Gravel (Moist)				
4						
5						
6			3.5/4			Top of LNAPL
7		Interval 3 Light Gray Silty CLAY (Saturated)				
8		End of Borehole				Bottom of LNAPL
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614288.895

Easting (NAD 83): 542576.771

Depth to Watertable (ft bgs): 5.5



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28_40W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28_40W

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil MIXED FILL.				
1						
2		Interval 2 Dark Gray SILT and CLAY, trace medium Sand, trace Gravel (Moist) POSSIBLE LAGOON SEDIMENT.	2.5/4			
3						
4						
5						
6			3.5/4			
7						
8		Interval 3 Light Gray Silty CLAY (Saturated)				
		End of Borehole				
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 0

Easting (NAD 83): 0

Depth to Watertable (ft bgs): 7



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28_50W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28_50W

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0 to 1.5		Interval 1 Fill: Soil MIXED FILL.				
1.5 to 4.0		Interval 2 Gray SILT and CLAY, trace medium Sand (Saturated)	1.5/4			
4.0 to 7.0		Interval 3 Light Gray Silty CLAY (Saturated)				Top of LNAPL
7.0 to 8.0		Interval 3 Light Gray Silty CLAY (Saturated)	4/4			Bottom of LNAPL
8.0		End of Borehole				
9.0						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614301.388

Easting (NAD 83): 542557.335

Depth to Watertable (ft bgs): 5.4



205 Campus Drive
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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-28_60W

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 8

Borehole Completed As: LN_B-28_60W

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil MIXED FILL.				
1						
2			4/4			
3						
4		Interval 2 Gray SILT and CLAY, trace medium Sand (Moist) POSSIBLE LAGOON SEDIMENT.				
5					5 - 5.5	
6		Interval 3 Light Gray Silty CLAY (Moist)	3.5/4			
7						
8		Interval 4 Light Gray fine SAND, trace Silt (Saturated)				
8		End of Borehole				
9						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-core

Northing (NAD 83): 614307.757

Easting (NAD 83): 542548.272

Depth to Watertable (ft bgs): 5



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: BLN_B-3

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 16

Borehole Completed As: BLN_B-3

Date Completed: 5/8/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil	3.5/4		0 - 0.5	
0.5					0.5 - 1	
1					1 - 1.5	
1.5					1.5 - 2	
2					2 - 2.5	
2.5					2.5 - 3	
3					3 - 3.5	
3.5					3.5 - 4	
4		Interval 2 Light Gray fine SAND, trace Silt and Clay (Saturated)	4/4		6 - 6.5	Top of LNAPL
6						
7						
8						
9						
10						
11						
12						
12		Interval 3 Pale Brown CLAY and SILT (Moist)			12 - 12.5	Bottom of LNAPL
13					12.5 - 13	
13		Interval 4 Light Gray coarse to fine SAND, trace Silt (Saturated)				
14						
15		Interval 5 Light Brownish Gray CLAY and SILT, trace medium Sand (Moist) (Firm/Firm) TILL LIKE.				
16						
17		End of Borehole				
18						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614625.704

Easting (NAD 83): 542678.966

Depth to Watertable (ft bgs): 5.9



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: BLN_B-15

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: BLN_B-15

Date Completed: 5/10/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil MIXED FILL.				
1						
2		Interval 2 Dark Gray SILT and CLAY, trace medium Sand (Moist) POSSIBLE LAGOON SEDIMENTS.	4/4			
3						
4						
5		Interval 3 Light Brownish Gray fine SAND, trace Silt (Saturated)				Top of LNAPL
6			4/4			
7						
8						
9					9 - 9.5	Bottom of LNAPL
10			4/4		9.5 - 10	
11						
12		End of Borehole				
13						
14						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614292.87

Easting (NAD 83): 542628.068

Depth to Watertable (ft bgs): 5



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Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: BLN_B-5

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 12

Borehole Completed As: BLN_B-5

Date Completed: 4/25/2007

Geologist/Logger: Michele Lortz

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface			0 - 0.5	Top of LNAPL
Interval 1		Light Brown coarse to fine SAND, trace Silt, little Gravel	4/4	19.1 ppm	0.5 - 1	
Interval 2		Moderate Brown coarse to fine SAND, trace Silt, little Gravel (Moist)			1 - 1.5	
Interval 3		Dusky Black medium to fine SAND, and Silt and Clay (Wet)			1.5 - 2	
Interval 4		Greyish Brown CLAY and SILT, and medium to fine Sand (Wet)			2 - 2.5	
Interval 5		Light Brown coarse to fine SAND, trace Silt (Wet) product	3/4	14.1 ppm	2.5 - 3	
Interval 6		Dark Brown coarse to fine SAND, little Silt and Clay (Wet)			7 - 7.5	
Interval 7		Light Brown medium to fine SAND, trace Silt (Saturated)	4/4	37 ppm	8.5 - 9	Bottom of LNAPL
					9.5 - 10	
				4.2 ppm	11 - 11.5	
12		End of Borehole			11.5 - 12	
13						
14						

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614562.015

Easting (NAD 83): 542650.367

Depth to Watertable (ft bgs): 4.6



205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: BLN_B-9

Project: Hatco

Client: Hatco Corporation

Project Location: Hatco, NJ

Total Depth (ft bgs): 16

Borehole Completed As: BLN_B-9

Date Completed: 5/9/2007

Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			Comments
Depth (ft bgs)	Symbol	Description	Recovery	PID/OVM (ppm)	Analytical Sample	
0		Ground Surface				
0		Interval 1 Fill: Soil	3.5/4		0 - 0.5	
1					0.5 - 1	
2					1 - 1.5	
3					1.5 - 2	
4					2 - 2.5	
5					2.5 - 3	
6		Interval 2 Light Brownish Gray CLAY and SILT (Moist)	4/4		3 - 3.5	
7						
8						
9						
10						
11						
12		Interval 3 Light Gray medium to fine SAND, some Silt (Saturated)	0/4			
13						
14						
15						
16						
17						
18		Interval 4 Pale Gray fine SAND, trace Silt (Saturated)	4/4		12 - 12.5	
19					12.5 - 13	
20						
21						
22						
23						
24		End of Borehole				

Drilling Subcontractor: ECDI

Drilling Method: Geoprobe

Sampling Method: Macro-Core

Northing (NAD 83): 614460.258

Easting (NAD 83): 542689.094

Depth to Watertable (ft bgs): 6

Test Trenches for Pond Extent Evaluation

During the test pit work half the excavations were completed to only 5-6 feet below surface and did not encounter ground water or just touched on the groundwater interface. As for the trenches that were dug deeper and water was observed, the water poured into the excavations until it reached the water table level at approximately 5-6 feet below surface. The water flow into the excavation was similar to if someone had broken open a pipe and the water was flowing from that. In the excavations where sand was observed near the water table, the water seeped out of the sands, causing the sand to slump into the excavation and undercut the walls. Typically it took an overnight for the water to reach and stay at that 5-6 foot level. At that point the water level stabilized and did not increase over time. The product flow into the excavations was a lot slower but still after a few hours was enough to cover the entire water surface.

Dewatering needed to be done in order to backfill the test pits with the material removed otherwise the water/product would have just been pushed up and out of the test pits.

Dewatering of the product/water was done with a sump pump that was skimmed across the top of the excavations to remove the accumulated product first. The pump is a dedicated LNAPL pump that is stored onsite. When it was decided that the water/product could not be really separated the water/product together was pumped into the LNAPL (TSCA) frac tank instead of split between TSCA tank and non-TSCA tank. The water/product was pumped by hoses into the LNAPL TSCA frac tank. The water was then removed while the excavations were being backfilled. The excavations were never pumped completely dry. The water was just lowered to a limit that allowed for backfill without the water creeping upwards and out. The amount of water removed was not documented but based on the size of the excavations and the depth the water was at I would say that approximately 2,000 gallons were removed total from the excavations. The pumping rate was approximately 4.5-5 gallons per min over the duration of the day. The water level dropped slowly in the test pits.

TRENCH 1

Debris (wood, rubber, plastic, brick, and glass)/stained soil and root mass was discovered at the north end of the proposed trench limits. The excavation was shifted north approximately 10 ft towards the above ground piping to see if the boundary could be found. It was observed that the pond continues underneath the above ground piping so the excavation was stopped. This excavation was only completed down to 6 ft as per the plan. Water was observed at 5-6ft with a red brown colored product on top. There was mixed debris in the excavation but not in a large enough quantity that would warrant segregating the material during disposal. The soil was a medium to fine sand with silt. There was trace to no clay present in the soils but we did only go down to 6 feet.

Meadowmat, fragmites, and tree roots were observed as a clearly defined layer in the excavation way below normal depths. This was a major factor in deciding whether I was located in the former pond or an area of fill mixed with debris. This boundary was observed at approximately 4 feet in this trench and was trending slightly upward towards the north and the above ground pipe.

TRENCH 2

Due to an underground utility on the eastern side approximately 10 feet past where the proposed trench end was Weston was unable to find the eastern edge of the former pond. We may in the future want to do a test pit or two in the Hatco roadway that is east of this area to try and find the eastern edge of the former pond. There was no debris or water in this excavation. The clay layer was found at 10.5ft below surface as per plan. The excavation was stopped approximately $\frac{3}{4}$ of the way west due to the close proximity of the monitoring well and the dry soils that were caving from the sides of the trench. Weston did not want to lose well (MW43S) into the trench. Again a meadowmat, fragmites, tree stump, and root layer was observed in the excavation down at 8 feet which was determined to be former pond. Soil was again the same medium to fine sand with silt but very dry.

Water was not observed in the trench which at the time I thought was odd since the well water level is always at 5 feet. There was no LNAPL observed and nothing seeping into the excavation.

TRENCH 3

At Trench 3 a larger amount of debris, same type as seen in trench 1, was observed but again nothing that would need to be segregated out during disposal. On the eastern edge of the trench there was no clay encountered. The excavation was completed down to 15ft and the material was all mixed sands which were super saturated with again a red brown product flowing into excavation. Weston left a 10ft section in the middle and dug on the western edge of the trench. On this side there was no sand and the clay layer was observed at 12ft below ground surface. No debris was observed on the western side of the trench. Water was at approximately 5-6ft below ground surface.

Another attempt was done at Trench 3 to try and extend it in an eastern direction to find the former pond edge. Trench 3 was expanded approximately 10-12 feet east and no boundary was found. Due again to a utility the trench was stopped short of locating an edge. Same level of debris (wood, rubber, wood, brick) was found at this location. We did not dig deep enough to encounter the water since that would have made the excavation sloppier but water and LNAPL is present at 5-6 feet at this trench.

Water and LNAPL was encountered at 5-6 feet below ground surface on both sides of the trench.

"On this side there was no sand and the clay layer..." To explain better: In the eastern trench 3 excavation super saturated coarse to fine sand was observed from 5 feet downward and no confining clay layer was observed. Above that was the same medium to fine sand with silt, dry. The super saturated sand keep slumping off the wall as water/LNAPL just poured out of the excavation sides. In the western trench 3 above the clay layer at 12 feet, only the same medium to fine sand with silt was observed not the super saturated coarse to fine sand that was seen in the eastern side. Debris was observed only on the eastern side of trench

TRENCH 4

Trench 4 was completed as shown on the original figure. There was a small amount of debris consisting of wood pieces some rubber and cobbles. It was completed to 5 feet where there was a combination of sludge soils with some LNAPL mixed in. Water was not encountered. The

former pond boundary extends further west into the roadway and over towards the EPT plant. There was no boundary between ponds located.

No mixed sand or clay was observed here. The soil below the stone roadway started off as the same medium to fine sand with silt and then approximately 4-5 feet below surface turned into sludge soils with some LNAPL pockets.

TRENCH 5

At trench 5 the digging was started at the western edge and moved in an eastern direction. Water was at 5ft below ground surface and red brown product was observed. A sand layer was encountered at 6ft and started layering upwards as the trench was dug eastward. The root mass and stained layer was observed trending upwards towards the east and the proposed trench boundary on the eastern side was extended by approximately 5-7 ft but due to an underground utility and the Hatco roadway on the east the former pond boundary was unable to be determined. The southernmost wall of the trench also had root mass and stained soil/debris which means the pond also extends in a southern direction from this trench.

The main factor in pond versus non pond was the layer of root mass observed with a minor consideration on the debris found in the trench. At trench 5 there was a clear root layer that was trending upward as to imply it was heading towards an edge in the next 5-10 feet from the trench. Due to that observation the first trench was placed further south to try and locate that pond edge.

TRENCH 6

Trench 6 was approximately 2 feet away from the underground and above ground utilities that run along the northern edge of this area. This trench was completed to 5 feet where LNAPL and water started to flow into the excavation. Black stained soil and wood debris was observed in this location in similar quantity to trench 1. The root mass layer was observed at 1-1.5ft below surface and continue north under the utilities. At this point the former pond extends north past where we were able to dig. The soil was the same medium to fine sand with silt with trace to no clay.

TRENCH 7

Trench 7 was added to the east of Trench 2. Trench 7 was only completed down to 4 feet where a black sludge, water and LNAPL were encountered. The debris in the hole was a mixture of wood, rubber, and glass. The trench could not be extended further north/northeast due to utilities.

TRENCH 8

Trench 8 was added to the west of trench 2 and monitoring well MW43S. This trench was installed to see the amount of debris on this side of the pond area due to a lack of other trenches for observation. The trench was completed down to 6 feet. This trench was heavily debris filled with wood, timbers, plastic, rubber, glass, and brick. No water was encountered and some sludge was observed at the bottom.

TRENCH 9

Trench 9 was located 30 feet south of trench 5 to find the pond edge. Roots, rubber and wood debris was observed in this locations mixed with black stained soils and sludge. Trench was completed to 6 feet with no water or LNAPL observed. Soil is the same medium to fine sand with silt, heavily compacted by the roadway.

TRENCH 9S

Trench 9S was moved 15 feet south of trench 9, 45 south of trench 5, to find the pond edge. Again roots and wood debris was observed mixed with the sludge and stained soils. Stained soils were observed starting at just under the surface of the compacted roadway. Trench was completed to 6 feet with no water or LNAPL observed.

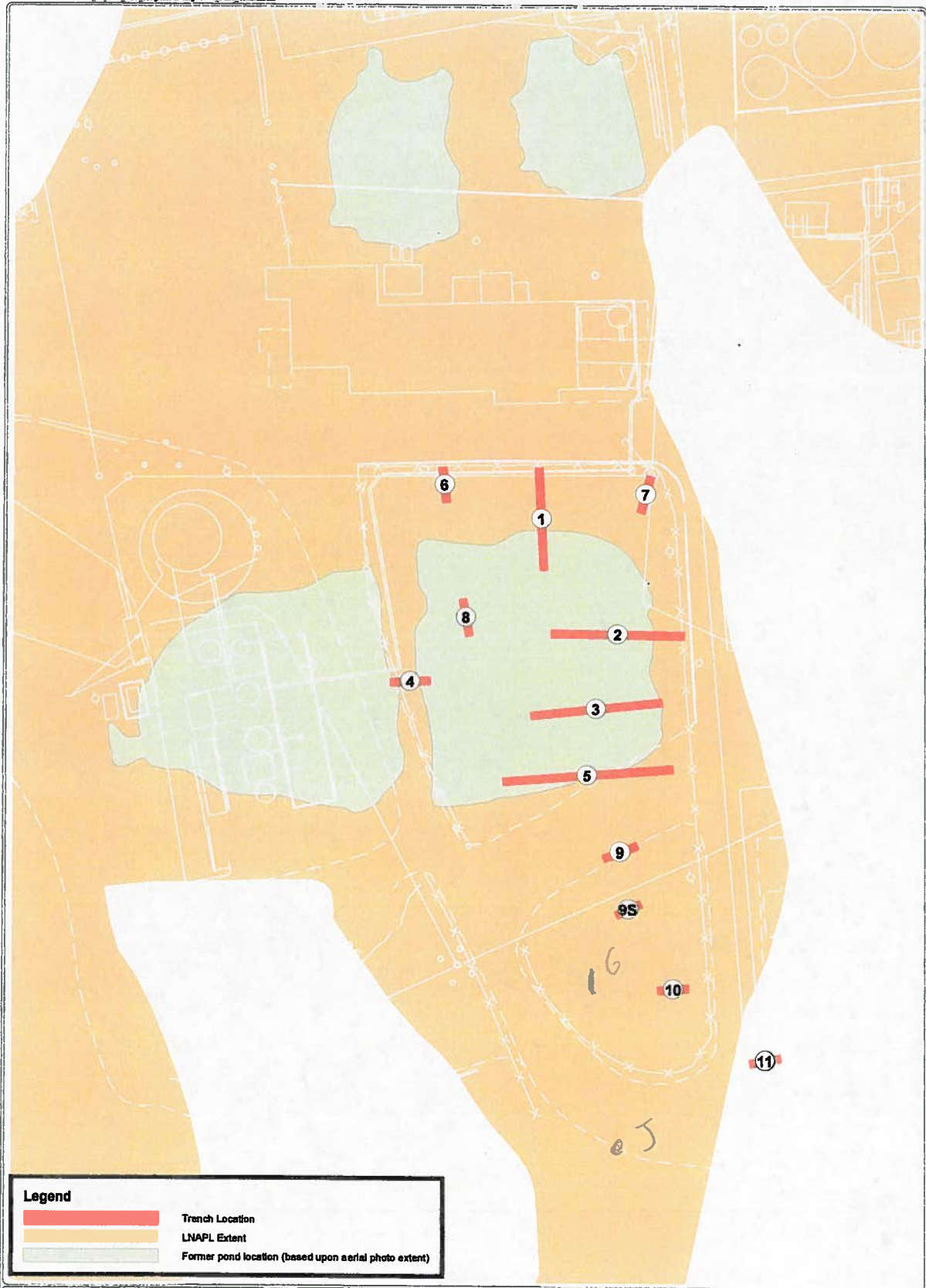
TRENCH 10

Trench 10 was located south of trench 5, 9, and 9s. Trench 10 was completed to 6 feet with no water observed. Black stained soils, wood debris and a root layer was observed in the locations mixed in with a sludge like layer. The soil is medium to fine sand with silt, heavily compacted by roadway and dry.

TRENCH 11

Trench 11 was located south and to the east of trench 10 outside the footprint of the LNAPL plume. This location had no debris, no odors and un-impacted looking soils. Soil was a fine sand, heavily compacted clay mixture that is probably keeping the LNAPL confined to the area its currently in.

***I think that the pond edge at least to the south is somewhere between trench 5 and trench 9. Past trench 9 I think I was observing what probably used to be a fragmites field that got dumped on and then stoned over to create the roadway. The root mass observed in trench 5 was different that the roots and fragmites observed south of that but the southern trenches were still beneficial in that we have the knowledge now that the LNAPL is interspersed with the debris and roots in what we have as the plume area. It would have been beneficial if I had extended trench 11 to find the LNAPL boundary line but as it was I had already created quite a few holes in Hatco's truck trailer roadway and we were blocking them from truck access.



Legend Trench Location LNAPL Extent Former pond location (based upon aerial photo extent)		SCALE: 1:480 DATE: 6-8-2011	
PROJECT: HATCO REMEDIATION CLIENT NAME: HATCO CORPORATION		TITLE: Test Trenches for Pond Extent Evaluation DRAWING NUMBER: 09667 PROJECT MANAGER: D. Kopcow CHECKED BY: A. Garrison DESIGNED BY: S. Poultney	

SE LEG LNAPL TEST PITS

SE-TP-01

Test Pit 1 is the northern most test pit completed during this effort. The location is just south of what used to be the grassy area or meadow located south of ZAA and east of EPT. See the attached figure for actual locations. This test pit was completed down to 6 feet below ground surface. The top 0 to 3 inches was stone and road gravel. From 3 inches to 6 inches was brown medium to fine sand with some small wood pieces and an old basement odor. This was the only overburden material observed and since it was so limited a sample was not collected. From 6 inches to 4 feet was a gray black stained coarse to fine sand, heavily compacted with a PCB odor. The gray clay confining layer was observed from 4 to 4.5 feet and was mixed with a trace amount of fine sand. Once the clay layer was broken from 4.5 to 6 feet was a gray white coarse to fine sand. The water and LNAPL bubbled up from the bottom of the excavation once the clay was punctured. Also observed was LNAPL seeping from the sides of the excavation just below the clay in the sand layer. The product observed was a golden red color.

This excavation was left open to observe the rate of groundwater flow and if it stabilized at the level observed in the nearby sumps. After one hour the water and product had risen 1 foot which based on excavation size was equivalent to 400 gallons of water/product. Approximately 35 gallons of product was on top of the water. Since this was in the active roadway the excavation was pumped out which took 15 minutes with a trash pump. This pumped the excavation down to dry and allowed us to backfill. Excavation was 4 ft by 13ft by 6 ft. No debris was observed.



SE-TP-02

Test pit 2 is located to the west of S-01 sump. The sump was opened up before the excavation and was observed to have a sheen of product on surface of water. This test pit was completed down to 8 feet below ground surface. The top 0 to 3 inches was stone and gravel. From 3 inches to 3 feet was black stained medium to fine sand with tree roots and grasses and a PCB odor. From 3 feet to 5 feet was a mixture of black medium to fine sand with layers of thin tan med to fine sand and clay. From 5 to 5.5 feet was gray white clay and fine sand. From 5.5 to 8 feet was black gray coarse to fine sand. Once the clay layer was broken the water with LNAPL bubbled up from the bottom but was more water than product. The product seemed to seep from the sides of the excavation in the sand layer below the clay and then look like it's bubbling up due to the water. The product observed was a golden red product.

This excavation was left open to observed the rate of groundwater flow. After two hours the water and product had risen 1.5 feet which was equivalent to 505 gallons of water/product. Approximately 45 gallons of product was on top of the water. Once again this was in the active roadway so the excavation was pumped out which took 30 minutes. This brought the water down to almost dry in the excavation and we were able to backfill. The excavation was 4 ft by 17 ft by 8 ft. No debris was observed.



SE-TP-03

Test pit 3 is located between S-01 sump and MW-52S. The well has consistently had product observed at the ground surface. The test pit was completed down to 7 feet below ground surface. The top 0 to 6 inches was brown medium to fine sand with stone and gravel. From 6 inches to 1 foot was black stained medium to fine sand with a PCB and old basement odor. 1 foot to 2 feet was yellow fine sand with rocks and cobbles. From 2 feet to 4 feet was white clay with red striations making it look like pink clay. From 4 feet to 5.5 feet was pink and brown clay. From 5.5 to 6 feet was white clay. From 6 to 7 feet was white gray coarse to fine sand in the southern half of excavation and black coarse to fine sand in the northern half. Water bubbled up at 6 feet with black product coming from the black coarse sand in the northern half and golden red at the southern portion.

The excavation was left open overnight due to location and waiting on sample results. The excavation was filled to the top when we returned the next morning. The water/product was approximately 3140 gallons with 75 gallons being product. It took around 3 hours to pump the excavation down to dry and back fill. The excavation was 4 ft by 15ft by 7 feet. No debris was observed,



SE-TP-04

Test pit 4 is northwest of MW-52S. 0 to 3 inches was brown medium to fine sand and organics. This test pit was completed down to 5 feet below ground surface. From 3 inches to 1 foot was black stained medium to fine sand with strong PCB odor. 1 foot to 3 feet was yellow medium to fine sand with some mixed black stained medium to fine sand and buried organics (tree roots, frag roots). 3 feet to 3.5 feet was white gray fine sand with some clay and cobbles. From 3.5 to 4 feet was white gray clay. From 4 feet to 5 feet below the clay was gray black coarse to fine sand. Product started to seep out of the sidewalls in the sand layer. After 5 minutes the water started to bubble up from the bottom of the excavation. The product was a golden red color. The product has a skunk like odor and blobs out with the water instead of just seeping out of the walls.

The excavation was left open over night and proceeded to fill with water and product. The water product was approximately 2540 gallons with 130 gallons being pure product. It took a little over 2.5 hours to pump the excavation down and backfill. The excavation was 4 ft by 17 ft by 5 ft. No debris was found.



SE-TP-05

Test pit 5 was located to the southeast portion of the SE leg between S-06 and S-07 sumps. The test pit was completed down to 10.5 feet. The top 0 to 3 inches was brown fine sand with roots and organics. From 3 inches to 3 feet was black stained medium to fine sand with roots. From 3 to 3.5 feet was yellow medium to fine sand with some clay mixed with white fine sand and clay. 3.5 feet to 5 feet was white coarse to fine sand mixed with black coarse sand. From 5 feet to 10 feet was white coarse to fine sand. From 10 to 10.25 feet was a thin layer of white gray clay. From 10.25 to 10.5 feet was white coarse to fine sand. At this point it was observed that water and sand was seeping out the sidewalls at 8 feet so excavation was completed while walls started caving away. After 5 minutes water started bubbling up from the bottom below the clay layer. A small amount of product was observed seeping from the wall in the southwest corner but otherwise only water. The product was a black color.

The excavation was immediately backfilled due to anticipated wet weather conditions. No water was pumped from the excavation. The excavation was 4 ft by 16ft by 10.5 ft. No debris was observed.



SE-TP-06

Test pit 6 was located to the northwest of S-07 and S-08 sumps. The test pit was completed down to 13 feet. The top 0 to 1 foot was black stained medium to fine sand with frag roots and rocks mixed with brown medium to fine sand. A couple large chunks of concrete were also buried from 1 foot down to 4 feet. 1 foot to 5.5 feet was red fine sand with some chunks of yellow clay and pockets of black stained fine sand. Strong PCB odor observed. From 5.5 to 6 feet was meadowmat. From 6 feet to 6.5 feet was white gray coarse to fine sand with cobbles. 6.5 feet to 13 feet was white gray coarse to fine sand. Water started seeping in the sidewalls at 6 feet below the clay layer and then started the collapse of the sidewalls. No product was initially observed but it should be noted that when the upper black stained soil mixed with the water, black product was created.

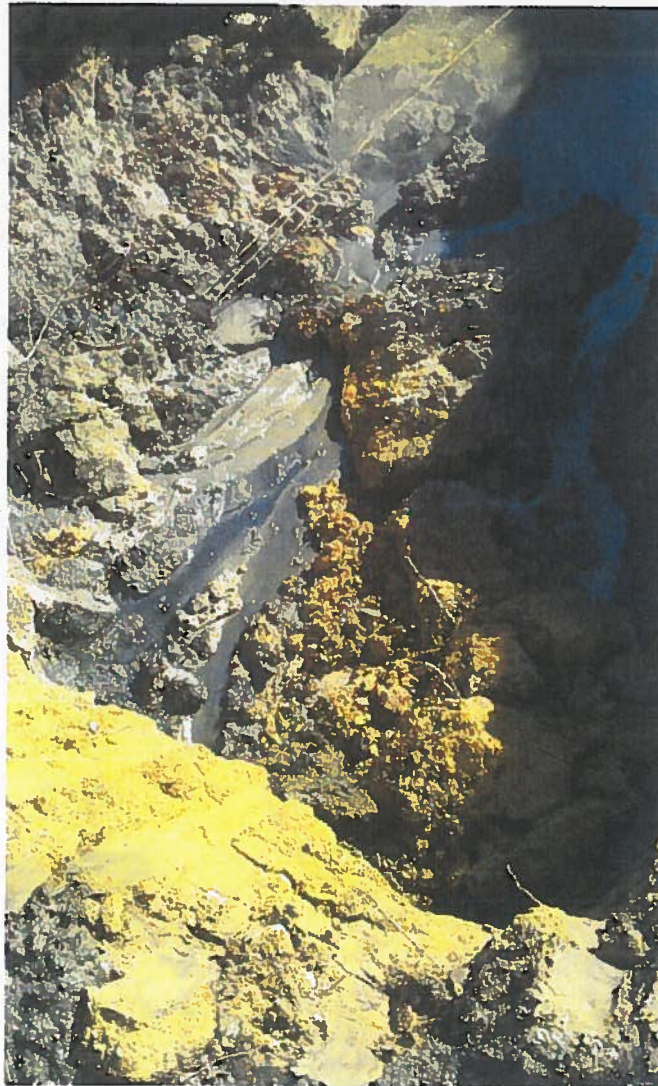
Once again due to the anticipated weather and hole collapse the excavation was backfilled immediately. The excavation was 4ft by 14ft by 13 ft. No debris except some concrete chunks was observed.



SE-TP-07

Test pit 7 was located on the western side of the LNAPL plume towards the thigh area of the man. The test pit was completed down to 10 feet. The top 0 to 3 inches was brown medium to fine sand with organics and roots. From 3 inches to 2 feet was yellow medium to fine sand with black stained medium to fine sand and old basement odor. From 2 feet to 5 feet was yellow white black mottled coarse to fine sand with some clay. From 5 feet to 10 feet was gray white clay with some fine sand. Water started seeping in from the sand on the western edge at around 3 feet below ground surface. There was a slight rainbow sheen and some black product when the water mixed with the stained black soils but otherwise no significant product observed.

The excavation was left open over night and it filled with water to just below ground surface. Water with sheen accumulated in the excavation to approximately 4800 gallons with trace amount of product. It took around 5 hours to completely remove the water and backfill the excavation. The excavation was 4 ft by 16ft by 10ft. No debris was observed.



SE-TP-08

Test pit 8 was located along the western side of the LNAPL plume near the bottom of the man's leg. The test pit was completed down to 10 feet. The top 0 to 3 inches was brown medium to fine sand with organics and PCB odor. The 3 inch to 6 inch portion was black stained medium to fine sand with some clay, gravel, rock and old wood pieces. From 6 inches to 5 feet was black stained fine sand. From 5 feet to 5.5 feet was meadowmat and old tree stumps, organics. 5.5 to 6 feet was gray white tan clay. From 6 feet to 8 feet was white coarse to fine sand with cobbles. From 6.5 feet to 10 feet was white coarse to fine sand. At 10 feet water started to bubble up from the bottom and there was a slow seep of water, product and sand out the sidewalls at 8 feet. Product did not bubble up from the bottom but seeped from the sides. The product was a black color.

The excavation was left open over night and filled with water. The estimated amount of water was 4500 gallons of water/product with 40 gallons being product. It took around 5 hours to pump the excavation empty and backfill. The excavation was 4 ft by 15 ft by 10 ft. No debris was observed.



SE-TP-09

Test pit 9 was located along the eastern portion of the LNAPL plum near the man's knee. The test pits was completed down to 7 feet. From 0 to 3 inches was road gravel and rocks. From 3 inches to 1 foot was tan white fine sand with black stained fine sand, rocks and cobbles. From 1 foot to 4 feet was white and pink clay with some orange fine sand cobbles mixed in. From 4 to 5.5 feet was white clay. From 5.5 to 6 feet was white black mottled coarse to fine sand. Then from 6 to 7 feet was black coarse to fine sand. Water started to bubble up between 6 and 7 feet below ground surface. Black product seeped out of the side wall in the sand layer directly below the clay. Any black stained soil that came in contact with the water created a black product sheen.

Due to the location in the active roadway this excavation was backfilled immediately. Approximately 500 gallons of water/product was pumped out the excavation before it was filled in. Of the 500 gallons approximately 50 gallons was product. It took a half hour to pump the excavation down to empty to backfill. The excavation was 4 ft by 15 ft by 7 ft. No debris was observed.



SE-TP-10

Test pit 10 was located on the eastern leg portion of the man just along the edge of the roadway. The test pit was completed down to 6 feet. The top 0 to 3.5 feet was black stained fine sand with some silt, roots, frag and organics. Bricks, rocks, and wood piece were also observed. From 3.5 to 4 feet was meadowmat. From 4 to 5 feet was white gray clay. Then from 5 to 6 feet was white gray coarse to fine sand. The water started to bubble up when you broke through the clay layer with black product seeping from the side wall of the sand layer below the clay. The product was a black color.

The excavation was left open over night and water accumulated to 1 foot below ground surface. Approximately 2600 gallons of water/product accumulated in the open excavation with 35 gallons being product. It took 2.5 hours to pump the excavation dry and backfill. The excavation was 4 ft by 15 ft by 6 ft. Debris was observed in the upper 3.5 feet but no product seemed to be trapped in the debris.



20 by 20 Test Pit

Due to the amount of water and product seen in SE-TP-03, 04, and 08 the 20 by 20 excavation trench box area was shifted to be located between TP-04 and TP-08 on the western edge of the LNAPL plume. The test pit was completed down to 10 feet. The top 0 to 3 inches was organics and frag roots. From 3 inches to 2 feet was black stained medium to fine sand. From 2 to 2.5 feet was meadowmat and roots. Then 2.5 to 3 feet was yellow brown clay. From 3 to 4 feet was yellow gray coarse to fine sand with strong PCB odor. 4 feet to 7 feet was white medium to fine sand, water was starting to seep under the sides of the trench box walls but no bubbling up of any significant amount of water. Small amount of black product was seeping in with the water but it seems to possible have been water mixing with the black stained soil above not true product. From 7 to 10 feet was brown white clay very soupy and saturated but still no upwelling of water.

At 10 feet I was not seeing the water bubble up effect or much product in the excavation. It seemed as if the walls of the trench box were blocking the horizontal flow of water and thus stopping the burst pipe bubble up effect that is observed when the clay layer is broken. The water was slowly seeping in through the spaces under and between the trench box pieces but not the major outpouring expected. So to test my theory that the trench box was stopping the horizontal flow thus limiting the water I had AWT start to remove the trench box panels to see if this would make a difference. As soon as two of the walls were removed the water burst through the bottom in multiple places and created the bubble up effect. The product was also seeping in from the sand layer starting at 3 feet and all the way down to 7 feet. The product was a black color.

The excavation also started to collapse in upon itself shortly after the water started bubbling up due to the wash out of the sandy walls and the heavy clay layers on top.



